

METHODS, SYSTEMS, AND IMPLANTABLE DEVICES FOR ENHANCING BLOOD GLUCOSE REGULATION

CROSS REFERENCE

[0001] This application claims priority to U.S. Patent Application No. 62/417,060, filed November 3, 2016, the specification(s) of which is/are incorporated herein in their entirety by reference.

FIELD OF THE INVENTION

[0002] The present invention relates to methods, systems, and devices for regulating blood glucose, more particularly to implantable encapsulated devices with glucose sensors, optionally with insulin secreting cells and insulin infusion systems.

GOVERNMENT SUPPORT

[0003] This invention was made with government support under Grant No. DK106933, awarded by NIH. The government has certain rights in the invention.

BACKGROUND OF THE INVENTION

[0004] The present invention relates to methods, systems, and devices for regulating blood glucose, such as implantable encapsulated devices with glucose sensors optionally with insulin secreting cells and insulin infusion systems. For example, the present invention may feature encapsulation devices (with a glucose sensors) connected to an insulin infusion pump for distribution of insulin. The insulin infusion pump may feature an insulin pouch fluidly connected to an insulin pump. In some embodiments, a glucose sensor is separate from the encapsulation device. The system may feature an additional implantable device comprising insulin secreting cells.

[0005] The disclosures of the following U.S. Patents are incorporated in their entirety by reference herein: U.S. Pat. No. 5,713,888; U.S. Pat. App. No. 2003/0087427.

SUMMARY OF THE INVENTION

[0006] The present invention features methods, systems, and devices for regulating blood glucose. For example, the present invention features a system comprising a